Lorenzo Fratini

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EXPERIENCE

Add Value   May 2024 — Present
Backend Software Engineer   *Ancona, Italy*
- **Achieved 2–5× faster query performance** by migrating analytical workloads from Elasticsearch to ClickHouse, enabling **sub-second insights on 100M+ procurement records with 95% analytical accuracy**.
- **Reduced operational costs** by migrating backend workloads from EC2 to Java-based AWS Lambda, enabling on-demand compute instead of always-on servers.
- **Improved reliability of high-volume data pipelines** by designing and optimizing backend features for enterprise clients in Europe and the US.

Blue Reply   Nov 2022 — May 2024
Backend Software Engineer   *Turin, Italy*
- **Delivered 10+ integration microservices** using Apache Camel, Spring Boot, and Quarkus, supporting synchronous and asynchronous workflows across distributed enterprise systems.
- **Reduced coupling between legacy and modern systems** by designing API-first integrations across SOAP/REST, JMS messaging, and relational databases, accelerating delivery for client teams.
- **Increased maintainability and performance** by migrating 40+ legacy Camel routes to Camel 4, reducing technical debt and improving runtime behavior in production environments.

EDUCATION

Università Politecnica delle Marche   Oct 2020 — Oct 2022
Master's Degree in Computer and Automation Engineering   *Ancona, Italy*
- **Final Grade:** 110/110 summa cum laude
- **Publication:** L. Fratini et al., "ChoEn: A Smart Contract Based Choreography Enforcer", IEEE PerCom Workshops, 2023.

Università Politecnica delle Marche   Oct 2017 — Jul 2020
Bachelor's Degree in Computer and Automation Engineering   *Ancona, Italy*
- **Final Grade:** 110/110 summa cum laude

PROJECTS

Moneyverse | *Java, Spring Boot, Kafka, ClickHouse, Kubernetes*   GitHub
- Architected a production-grade personal finance analytics platform featuring a **decentralized microservices architecture** and asynchronous communication via Kafka.
- Achieved high-performance **real-time analytics** by aggregating data with ClickHouse, orchestrating the entire fully-containerized environment via Kubernetes and Helm.

Shorty | *Java, Spring Boot, AWS Lambda, DynamoDB, AWS SAM*   GitHub
- Developed a high-performance, serverless URL shortener architected on AWS using **Infrastructure as Code (IaC)** provisioning.
- Resolved **Java cold-start bottlenecks** and achieved single-digit millisecond latency by implementing Tiered Compilation and custom runtime tuning.

TubeGuardian | *Java, Spring AI, RabbitMQ, Qdrant, LLM (Gemini)*   GitHub
- Engineered an AI-powered semantic brand suitability platform leveraging **Retrieval-Augmented Generation (RAG)** and Vector Databases to evaluate video inventory.
- Designed **event-driven AI inference pipelines** via RabbitMQ and a deterministic rules engine to orchestrate polyglot microservices asynchronously.

SKILLS

Languages & Frameworks	Java, TypeScript, Python, Node.js, Spring Boot, Quarkus, Spring AI
Data, AI & Distributed	Apache Kafka, RabbitMQ, ClickHouse, PostgreSQL, DynamoDB, Redis, Qdrant, RAG
Cloud & DevOps	AWS (Lambda, S3, API Gateway, SAM), Kubernetes, Helm, Docker, GitHub Actions